REMARKS

This application has been carefully reviewed in light of the Office Action dated June 18, 2003 (Paper No. 20). Claims 1 to 29, 32 to 60 and 63 to 91 are currently in the application, with Claims 1, 32 and 63 being the independent claims. Reconsideration and further examination are respectfully requested.

The drawings were objected to under 37 C.F.R. § 1.84(p)(4) for using identical reference numerals to designate different items in the drawings. In response, Applicants have amended Figure 1, and its associated description in the specification, to add the character "S" in front of the reference numerals identifying the steps in the depicted flowchart.

The drawings were also objected to under 37 C.F.R. § 1.84(p)(5) for discrepancies between the reference numerals and symbols used in the drawings and the associated descriptions in the specification. In response, Applicants have amended the drawings and the specification to address the issues raised in the Office Action. Specifically, Figure 6A has been amended to change the delta symbol to an alpha symbol and Figure 15F has been amended to change the alpha symbol to a gamma symbol. In addition, the description in the specification associated with Figure 16 has been amended to more closely correspond with Figure 16.

A Letter Transmitting Formal Drawings together with replacement formal drawings containing the drawing changes outlined above accompanies this Amendment. Entry of the replacement drawings and withdrawal of the drawing objections are respectfully requested.

Applicants thank the Examiner for the indication that Claims 11 to 13, 16 to 27, 42 to 44, 47 to 58, 73 to 75 and 78 to 89 contain allowable subject matter and would be allowable if rewritten in independent form. Applicants have not rewritten any of these claims in independent form at this time since all of the claims in the application are believed to be in condition for allowance, as discussed in more detail below.

Claims 1 to 3, 14, 28, 29, 32 to 34, 45, 59, 60, 63 to 65, 76, 90 and 91 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,268,871 (Rice); and Claims 4 to 10, 15, 35 to 41, 46, 66 to 72 and 77 were rejected under § 103(a) over Rice in view of U.S. Patent No. 5,940,082 (Brinegar). Applicants have considered the Examiner's comments together with the applied references and respectfully submit that the claims herein are patentably distinguishable over the applied references for at least the following reasons.

Independent Claims 1, 32 and 63 concern orientating a space curve that is defined by digital data corresponding to an image. According to the invention, a space curve is provided, where the space curve has two endpoints and is adapted to have one of two directions, either a forward direction proceeding along the space curve from an initial endpoint to a terminating endpoint or a reverse direction proceeding along the space curve from the terminating endpoint to the initial endpoint. A desired direction is selected and a first vector having a direction which is the same as the selected desired direction is generated. At least one second vector having a corresponding direction representative of and derived from a corresponding characteristic of the space curve is generated and the first and second vectors are compared. Based on this comparison, a direction of the space curve is determined, where the determined direction is either the forward direction or the reverse

direction, that is closest in direction to the selected desired direction. The direction of the space curve is then orientated to the determined direction.

The applied references are not understood to disclose or suggest the foregoing features of the present invention. In particular, the applied references are not understood to disclose or suggest at least the features of providing a space curve that has two endpoints and that is adapted to have one of two directions, either a forward direction proceeding along the space curve from an initial endpoint to a terminating endpoint or a reverse direction proceeding along the curve from the terminating endpoint to the initial endpoint, and determining a direction of the space curve, the determined direction being either the forward direction or the reverse direction, that is closest to a selected desired direction.

Rice concerns the generation of a blended curve using a set of constraint points, where each constraint point has associated conditions that the blended curve must satisfy at that particular point. The Office Action contended that the blended curve described in Rice directly corresponds to the space curve of the claimed invention. Applicants respectfully disagree with this characterization of the blended curve described in Rice.

Figure 6 of Rice is understood to depict the geometric conditions for generating the blended curve 60 depicted in Figure 10. The Office Action contended that Figure 6, together with its associated description in the specification, describes the blended curve as having either a forward direction or a reverse direction. While the constraint points 12a, 12b and 12c are understood to be ordered, see column 3, lines 27 and 28,

nothing in Rice is understood to disclose or suggest that the blended curve 60 generated using these constraint points has either a forward direction in which the blended curve proceeds from an initial endpoint to a terminating endpoint or a reverse direction in which the blended curve proceeds from the terminating endpoint to the initial endpoint.

Rice also describes the use of direction vectors 30a, 30b and 30c, as shown in Figures 4, 6 and 10, in association with the constraint points. However, these vectors are not understood to describe the direction of the blended curve as described in the claimed invention, but rather are understood to merely describe a continuity condition at a particular constraint point. In fact, Applicants submit that the direction vectors cannot indicate the direction of the blended curve as described in the claimed invention. Specifically, since direction vector 30a is opposite in direction to direction vector 30b, it is unclear whether the blended curve 60 depicted in Figure 10 has either a forward direction or a reverse direction as described in the claimed invention. Should the Examiner maintain the rejection over Rice, Applicants respectfully request clarification on what direction the blended curve 60 shown in Figure 10 is understood to have.

In view of the foregoing, Rice is not understood to disclose or even suggest providing a space curve that has two endpoints and that is adapted to have one of two directions, either a forward direction proceeding along the space curve from an initial endpoint to a terminating endpoint or a reverse direction proceeding along the curve from the terminating endpoint to the initial endpoint, and determining a direction of the space curve, the determined direction being either the forward direction or the reverse direction, that is closest to a selected desired direction.

Brinegar, which was cited in the rejection of certain dependent claims, is not understood to disclose or suggest anything to remedy the foregoing deficiencies of Rice. In particular, Brinegar is not understood to disclose or suggest at least the features of providing a space curve that has two endpoints and that is adapted to have one of two directions, either a forward direction proceeding along the space curve from an initial endpoint to a terminating endpoint or a reverse direction proceeding along the curve from the terminating endpoint to the initial endpoint, and determining a direction of the space curve, the determined direction being either the forward direction or the reverse direction, that is closest to a selected desired direction.

Accordingly, independent Claims 1, 32 and 63 are believed to be allowable over the applied references. Reconsideration and withdrawal of the § 103(a) rejection of Claims 1, 32 and 63 are respectfully requested.

The other rejected claims in the application are dependent from the independent claims discussed above and therefore are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California, office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,

Attorney for Applicants

Registration No. 50,957

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-2200
Facsimile: (212) 218-2200

CA_MAIN 69911 v 1